

<b>Notice of Allowability</b>	Application No.	Applicant(s)	
	10/707,944	JENSEN ET AL.	
	Examiner	Art Unit	
	Thomas K. Pham	2121	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to original application filed 01/27/2004.
2. ☒ The allowed claim(s) is/are 1-22.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All    b) ☐ Some\*    c) ☐ None    of the:
  1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
  - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
    - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
  - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |  |  |
|--|--|
| 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)            |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 6. <input type="checkbox"/> Interview Summary (PTO-413),<br>Paper No./Mail Date _____. |
| 3. <input checked="" type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),<br>Paper No./Mail Date _____ | 7. <input type="checkbox"/> Examiner's Amendment/Comment                               |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br>of Biological Material                     | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance   |
|  | 9. <input type="checkbox"/> Other _____.   |

***Reasons for Allowance***

1. Claims 1-22 are allowed.
2. The following is an examiner's statement of reasons for allowance:

While Geffs (U.S. Patent No. 4,898,512) discloses a system for reducing the effects of draft tube pressure fluctuations acting on a runner in a hydraulic reaction turbine. An air inlet is provided leading into the chamber to cushion the pressure fluctuations as much as possible before they get to the turbine runner of the turbine. Geffs does not teach engaging an air injection means when a magnitude of radial vibration detected in said rough load zone range is above a predetermined threshold and disengaging said air injection means when one of said measured generator power output exceeds a predetermined level; and other limitations related to these features in combination with the remaining elements and features of the claimed invention.

March (U.S. Patent No. 6,490,506) teaches a system for monitoring maintenance information in a hydroelectric power generation facility comprises sensors coupled to a controller for detecting actual levels of operating parameters at an operating condition. The at least one monitored parameter includes a stressor capable of affecting a life span of the turbine or one of its components, and/or a calculated amount of the life span of the component or turbine used up over the operating period. March does not teach a system for reducing vibration in a turbine-generator that measures a magnitude of radial vibration, detecting vibration frequencies in a rough load zone range, or engaging/disengaging an air injection means under certain condition; and other limitations related to these features in combination with the remaining elements and features of the claimed invention.

And Morgunov (U.S. Patent No. 5,261,787) discloses a design of a hydraulic turbine used in hydroelectric generating plants that reduce and/or overcome surging or vibration during a change in load. Morgunov does not teach engaging an air injection means when a magnitude of radial vibration detected in said rough load zone range is above a predetermined threshold and disengaging said air injection means when one of said measured generator power output exceeds a predetermined level; and other limitations related to these features in combination with the remaining elements and features of the claimed invention.

Neither of these references taken either alone or in combination discloses a method and device for reducing vibration in a turbine-generator having all the claimed features of applicant's instant invention, specifically including: measuring a magnitude of radial vibration of a turbine shaft with at least one vibration sensor configured to generate a vibration signal indicative of vibration frequency; measuring a generator power output with a power out-put sensor configured to generate a generator power output signal; detecting vibration frequencies in a rough load zone range; engaging an air injection means when a magnitude of radial vibration detected in said rough load zone range is above a predetermined threshold; storing a generator power output level as a reference level when said engaging said air injection means; and disengaging said air injection means when one of said measured generator power output exceeds a predetermined level and said measured generator power output differs from said reference level by a predetermined amount. Also, there is no motivation to combine the references to meet these limitations. It is for these reasons that applicant's invention defines over the prior art of record.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue

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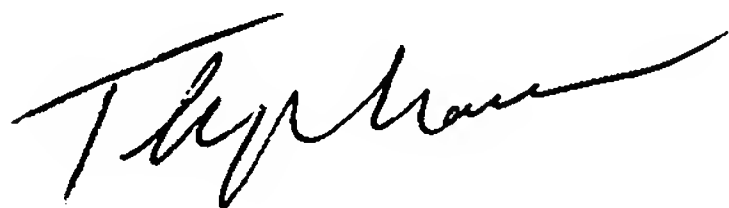
fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to examiner *Thomas Pham*; whose telephone number is (571) 272-3689, Monday - Thursday from 6:30 AM - 5:00 PM EST or contact Supervisor *Mr. Anthony Knight* at (571) 272-3687.

Any response to this office action should be mailed to: **Commissioner for Patents, P.O. Box 1450, Alexandria VA 22313-1450**. Responses may also be faxed to the **official fax number (571) 273-8300**.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

**Thomas Pham**  
*Patent Examiner*



November 9, 2005



**Anthony Knight**  
**Supervisory Patent Examiner**  
**Group 3600**